## REMARKS

### I. Status of the Claims

Claims 3-29 are pending in the application. Claims 1 and 2 have been cancelled. Claims 3-5, 7, 8 and 10-23 have been amended. Claims 3, 4, 7, 8 and 10-23 have been amended to depend from claim 5.

Claims have been amended to more clearly define the invention and without prejudice to applicants' rights to pursue the claims in a continuing application. Claim amendments are for the purposes of improved clarity or consistency of claim language unless otherwise noted. No claim amendment should be construed as acquiescence in any ground of rejection. No new matter has been added by this amendment. Support for the amendment to claims can be found throughout the specification and, for example in claims 1 to 29, as originally filed.

### II. Election/ Restriction

The election of species has been withdrawn. The Office Action stated that applicants have admitted on the record that the species "do not define independent inventions" since they "act by the same mode of operation and are capable of use for the same function." Accordingly, this alleged admission has been used in the rejection under 35 U.S.C. § 103(a) of the invention.

Applicants respectfully disagree with the Office Action's interpretation of applicants' statement and argument in the response filed May 15, 2006. The conclusion in the Office Action that the inventions are not patentably distinct is in error. Applicants' arguments are not a statement coupled with evidence. Therefore, the statements alone do not establish that the inventions are not patentably distinct. Arguments of counsel alone cannot take the place of evidence in the record in response to an examiner's rejection. See MPEP 2164.06 (c) (V). In the May 15, 2006 response, applicants argued that species identified by the Office Action in claims 3 to 29 are encompassed within generic claims 1 or 2 which refer to a composition of matter for an active structure MAP-S having improved biological activity. As stated in the response, the composition of matter for the active structure MAP-S of claims 1 and 2 is referred to in several layers of dependent claims, 3 to 29, which set forth specific examples of compounds of formula: $(R)_{n+1}$-$(Z)_n$-X. More than one species of an invention, not to exceed a

reasonable number, may be specifically claimed in different claims within one application. See 37 C.F.R. § 1.141. As discussed below, claims 3-29 patentably defines over the prior art cited under 35 U.S.C. § 103(a) and applicants' statement.

## III. Claims Are Patentable Under 35 U.S.C. § 112 first paragraph

Claims 1-4, 6-13, 17 and 20-24 have been rejected under 35 U.S.C. § 112 first paragraph as allegedly failing to comply with the written description requirement as including new matter not supported by the original disclosure. The Office Action alleged that the specification and claims as originally filed do not provide support for the invention as in claims 1-4, 6-13, 17 and 20-24. In particular, the Office Action argued that the recitation of an antigenic peptide (R) of any length and containing any type and number of cell-binding ligands, any type and number of amino acids up to 1500 amino acids, anti-inflammatory structures anti-thrombogenic structures, growth factor structures, adhesion barrier structures, and combinations thereof, with the proviso that the MAP has a active functional groups to covalently link the MAP structure to the surface of the substrate (S), is not supported by the specification. Applicants traverse the rejection.

The specification and claims as originally filed provides adequate written description for the composition of pending claims 3-13, 17 and 20-24 as amended. Claims 3 and 5 have been amended to more clearly define the invention. The specification provides support for the variable (R) which contains any type and number of cell-binding ligands, anti-inflammatory structures, anti-thrombogenic structures, growth factor structures, adhesive or adhesion barrier structures, and combinations thereof up to about 200 amino acids. For example, MAP8-growth factor VEGF is a MAP-S peptide having an R group comprising a VEGF polypeptide which is up to 200 amino acids in length. See specification, for example, page 75, line 27 to page 76, line 9. The claims find further support in the specification, for example, the MAP-S compounds in Table 2 on pages 23-26, Tables 3 to 6 on pages 27-45, and MAP-S anti-inflammatory agent and MAP-S growth factor agent in Examples 9A and 9B on pages 75-76.

The specification further provides support for Z is lysine, polylysine, ornithine or any trifunctional organic structure. For example, polylysine is a polypeptide up to a length of 500 amino acids. Polylysine is known in the art to be a high molecular weight polymer of lysine.

Polylysine in the molecular weight range from 70,000 to 150,000 daltons is commercially available. See, for example, the product information for poly-L-lysine hydrobromide at MP Biomedicals at: www.mpbio.com/product_info.php?cPath=491_6_39&products_id=152689. A polylysine homopolymer of 500 amino acids will have a molecular weight of approximately 75,000 daltons. Therefore, each Z comprising a total of up to about 500 amino acids is adequately described in the specification and within the knowledge of one skilled in the art.

Applicants respectfully request that the rejection of claims 3-13, 17 and 20-24 under 35 U.S.C. § 112 first paragraph be withdrawn.

## IV. Claims Are Patentable Under 35 U.S.C. § 112 second paragraph

Claims 2-19, 21-24, 28-29 are rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

Claim 2 recites that X can be "linked amino acids 1-5 $X_1$, $X_2$, $X_3$, $X_4$, $X_5$." The Office Action stated that it is unclear if the $X_1$, $X_2$ variables define specific peptides of lengths between 1 and 5 amino acids or are individual amino acids. Claim 5 includes the limitations of cancelled claim 2. Claim 5 has been amended without limitation solely to clarify the claim. Support for the amendment to claim 5 can be found in claim 1 as filed.

Claims 19 recites the limitation "X1-X2-" in base claim 2. The Office Action stated that there is insufficient antecedent basis for this limitation in the claim. Claim 5 has been amended without limitation solely to clarify the claim. Claim 5 provides sufficient antecedent basis for claim 19 which has been amended to depend from claim 5. Furthermore, claim 19 states that "X is $-X_1-$ or $-X_1-X_2-$" referring to claim 5 wherein X is linked amino acids of 1 to 5 in length, (X1 to X5).

Applicants respectfully request that the rejection of claims 3-19, 21-24, 28-29 under 35 U.S.C. § 112 second paragraph be withdrawn.

## V. Claims Are Patentable Under 35 U.S.C. § 103(a)

Claims 1-29 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Nomizu et al. in view of Ruben et al. Applicants traverse the rejection.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation to modify the reference or to combine the reference teachings so as to arrive at the claimed invention and there must be a reasonable expectation of success for achieving the claimed invention as a whole. See *In re Vaeck*, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Here, a proper *prima facie* case of obviousness has not been set forth.

Claims 1 and 2 have been cancelled. Claim 5, as currently amended, is directed to a composition of matter for the active structure MAP-S wherein MAP is an organic molecule which is covalently bound to a substrate S, in part, and wherein the organic structure MAP is selected from$(R)_{n+1}$-$(Z)_n$-X, wherein $R_1$ to $R_{16}$ are independently selected from the group consisting of GTPGPQGIAGQRGVV (SEQ ID NO: 1); RGD (SEQ ID NO: 2); REDV (SEQ ID NO: 3); WQPPRARI (SEQ ID NO: 4); SIKVAV (SEQ ID NO: 6); RYVVLPRPVCFEKGMNYTVR (SEQ ID NO: 7); GEFYFDLRLKGDK (SEQ ID NO: 8); GAG (SEQ ID NO: 9); QGIAGQ (SEQ ID NO: 10); KNEED (SEQ ID NO: 11); PDSGR (SEQ ID NO: 12); anti-inflammatory agents; antithrombogenic agents; growth factor agents; and adhesion barrier agents.

The Office Action has not established a *prima facie* case of obviousness. Neither the Nomizu et al. reference nor the Rubin et al. reference teaches or suggests applicants' claimed invention, a composition of matter as in claims 3 to 19 for the active structure MAP-S wherein $R_1$ to $R_{16}$ are the selected group of peptides or therapeutic agents. Furthermore, the combination of references does not teach or suggest the claimed pharmaceutical composition of claims 20-21 or the claimed implant of claims 22 to 29 comprising the active structure MAP-S. The Office Action cited the Nomizu et al. reference which refers to a Tam reference to teach multimeric form of the active laminin peptide, YIGSR, but the reference does not teach attachment to a substrate. The Office Action further cited the Ruben et al. reference to refer to MAP attached to a non-immunogenic lysine core and attached to a polyethylene glycol-polystyrene (PEG-PS) support. The Ruben et al. reference does not cure the deficiency of the primary reference. The combination of references does not teach or suggest applicants' claimed invention. The combination of references does not teach or suggest that the claimed R groups GTPGPQGIAGQRGVV (SEQ ID NO: 1); RGD (SEQ ID NO: 2); REDV (SEQ ID NO: 3); WQPPRARI (SEQ ID NO: 4); SIKVAV (SEQ ID NO: 6); RYVVLPRPVCFEKGMNYTVR (SEQ ID NO: 7); GEFYFDLRLKGDK (SEQ ID NO: 8);

GAG (SEQ ID NO: 9); QGIAGQ (SEQ ID NO: 10); KNEED (SEQ ID NO: 11); PDSGR (SEQ ID NO: 12); anti-inflammatory agents; antithrombogenic agents; growth factor agents; or adhesion barrier agents can form a MAP structure or a MAP-S structure.

The Office Action further stated that in view of applicants' response filed May 15, 2006, statements in the response have deemed that all of the compounds in claims 2 to 29 are obvious variants of one another. Applicants respectfully disagree with the Office Action's interpretation of applicants' statement and argument in the response filed May 15, 2006. Applicants argued that the inventions are patentably distinct. Applicants' arguments are not a statement coupled with evidence and therefore the statements alone do not establish that the inventions are not patentably distinct. Arguments of counsel alone cannot take the place of evidence in the record in response to an examiner's rejection. See MPEP 2164.06 (c) (V). In the May 15, 2006 response, applicants argued that the species identified by the Office Action in claims 3 to 29 are patentably distinct. The species are encompassed within generic claims 1 or 2 which refer to a composition of matter for an active structure MAP-S having improved biological activity. As stated in the response, the composition of matter for the active structure MAP-S of claims 1 and 2 is referred to in several layers of dependent claims, 3 to 29, which set forth specific examples of compounds of formula: $(R)_{n+1}$-$(Z)_n$-X. More than one species of an invention, not to exceed a reasonable number, may be specifically claimed in different claims within one application. See 37 C.F.R. § 1.141.

There is no motivation to combine the teachings of the cited references with applicants' statements to obtain applicants' claimed invention. The compositions of claims 3 to 29 are MAP-S structures with various R groups which may be peptides or chemical compounds having a variety of biological functions as anti-metastatic agents, anti-inflammatory agents, anti-thrombogenic agents, growth factor agents, or adhesion barrier agents. Applicants have not stated that these various species are obvious variants. Rather the claimed compounds act as MAP-S compounds having in common the fact that they provide improved activity of a biologically active peptide or chemical compound. MAP-S compounds as claimed provide, for example, improved cell adhesion, improved cell proliferation, improved anti-inflammatory activity, or improved anti-thrombogenic activity. There is simply no motivation to combine the teachings related to MAP compounds containing a YIGSR peptide of the Nomizu et al. reference and the Rubin et al. reference with

applicants' statements to obtain applicants' claimed invention. Since the combination of references lacks any teaching or suggestion to use a composition of matter for the active structure MAP-S wherein MAP is an organic molecule which is covalently bound to a substrate S, in part, wherein the organic structure MAP is selected from$(R)_{n+1}$-$(Z)_n$-X, wherein $R_1$ to $R_{16}$ are independently selected from the group consisting of GTPGPQGIAGQRGVV (SEQ ID NO: 1); RGD (SEQ ID NO: 2); REDV (SEQ ID NO: 3); WQPPRARI (SEQ ID NO: 4); SIKVAV (SEQ ID NO: 6); RYVVLPRPVCFEKGMNYTVR (SEQ ID NO: 7); GEFYFDLRLKGDK (SEQ ID NO: 8); GAG (SEQ ID NO: 9); QGIAGQ (SEQ ID NO: 10); KNEED (SEQ ID NO: 11); PDSGR (SEQ ID NO: 12); anti-inflammatory agents; antithrombogenic agents; growth factor agents; and adhesion barrier agents, claims 3 to 29 patentably defines over the cited prior art. Applicants therefore request that the rejection of claims 3 to 29 under 35 U.S.C. § 103(a) be withdrawn.

## VI. Conclusion

In view of the foregoing, claims 3-29 of the application are now in condition for allowance. The prompt issuance of a formal Notice of Allowance is therefore requested.

If the examiner believes a telephone conference would expedite allowance of this application, please telephone the undersigned at 206-332-1380.

Date: December 27, 2006

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